

V. Sustainability and Project Expansion

As described in Chapter IV, replicability and the ability to serve as a model for others were two of the key criteria the TIAP program placed on projects in 1994 and 1995. Implicit in these criteria are fiscal and system viability, as well as projects' ability to scale up. In this chapter, we assess the extent to which the 1994 and 1995 projects were able to secure ongoing funding and expand their reach, as well as factors that hindered their efforts to maintain services after the grant period had ended.

KEY FINDINGS

Nearly 90 percent of the 1994 and 1995 demonstration and access projects were still in operation at the time of the mail survey. Specifically, 53.3 percent were still in full operation; 17.0 percent were serving a function that had changed, grown, or expanded; 11.1 percent were serving fewer end users than intended; and 8.1 percent were providing a limited range of services.

Lack of maintenance funding was the chief threat to project sustainability among demonstration and access projects. Respondents in the 37 demonstration and access projects that were no longer operating at full capacity (or had ceased operating entirely) were asked to identify the factors responsible for the decrease in their projects' activities or scope. Nineteen of these projects ceased or cut back project operations due to a lack of funding for ongoing maintenance of the project operations or systems.

Many of these projects also reported that personnel and staffing problems (15 projects) and technological obsolescence (13 projects) inhibited sustainability.

Almost four-fifths of the 1994 and 1995 planning projects indicated that their telecommunications plan had been partially or fully implemented at time they completed the mail survey. The remaining 11 planning projects indicated that they were still working to secure the necessary funding, personnel, or partners needed to implement the plan (10.4 percent), or that their plan had not been implemented and no steps were being taken to initiate implementation (6.2 percent).

Nearly two-thirds of demonstration and access projects had expanded to serve additional end users beyond those targeted in the proposal. These projects have not only increased the numbers of persons being served and the numbers of access sites and nodes for their wide area networks, many also have taken advantage of the Internet's capabilities to dramatically broaden the service area covered by their projects. The total dollar amount of additional equipment or resources that were leveraged in connection with these expansions was over \$93 million. The majority of projects leveraged funds in the range of \$100,000 to \$1 million. Our analyses found that projects funded for 21 months or longer were more likely to have expanded to serve additional end users than were projects funded for a shorter duration. In addition, demonstration projects were

more likely than access projects to have expanded to serve additional end users.

Nearly two-thirds of demonstration and access projects had generated spin-off activities that provide additional services not included in the TIAP proposal. The dollar amount for additional equipment or resources that were leveraged in connection with these spin-off activities was approximately \$41 million. The majority of projects leveraged spin-off funds in the range of \$300,000 to \$700,000.

Most demonstration and access projects were able to secure funding for a broad array of operating expenses. The three most frequently cited ongoing operating expenses for which funding was secured were access lines (75.6 percent), maintenance and upgrades (65.2 percent), and personnel and contractual salaries (61.5 percent). In addition, several of the site visit projects reported that they secured funding by becoming revenue generators, e.g., began collecting user fees for website development or training.

STATUS OF PROJECTS AT THE TIME OF THE MAIL SURVEY

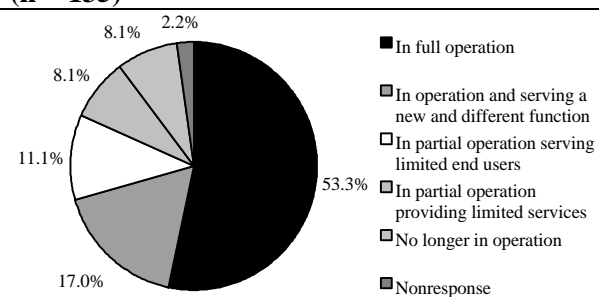
Demonstration and Access Projects

As shown in Figure 5-1, the vast majority (89.5 percent) of demonstration and access projects were still in operation at the time they completed the mail survey. Specifically:

- Over half (53.3 percent) were still in full operation;
- Just under one-fifth (17.0 percent) were serving a function that had changed, grown, or expanded considerably from that outlined in the original proposal (see Exhibit 5-1 for an example of a case study project that is serving an expanded role);

- Just over one-tenth (11.1 percent) were providing the full range of services, but to fewer end users than intended; and
- Just under one-tenth (8.1 percent) were serving the full scope of end users, but providing a limited range of services (see Exhibit 5-2 for an example of a case study project that is providing a limited range of services).

Figure 5-1
Current status of TIAP projects: 1994 and 1995 demonstration and access grants (n = 135)



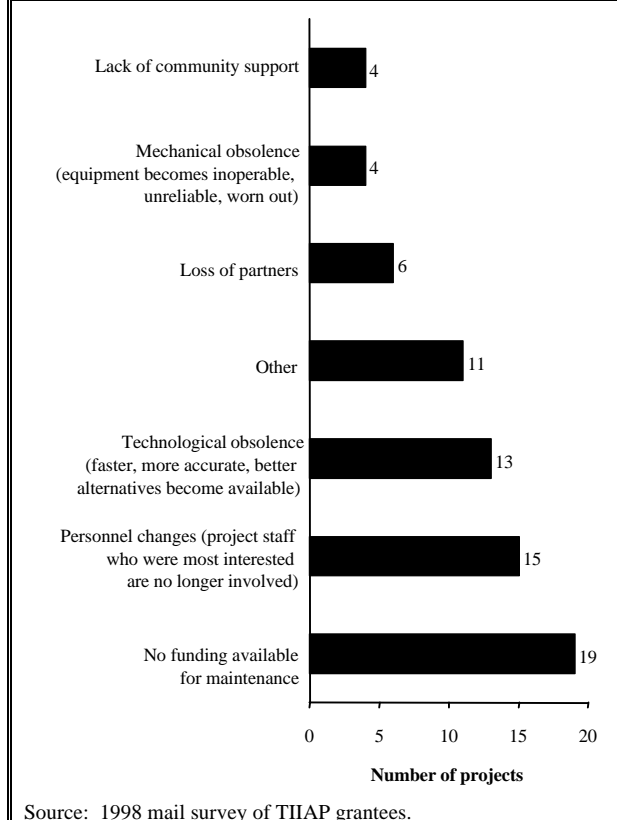
Note: Percents may not add to 100 because of rounding.

Source: 1998 mail survey of TIAP grantees.

The remaining projects had ceased operation by the time the mail survey was administered. Exhibit 5-3 provides an example of a case study site that had ceased operations due to technological obsolescence.

Respondents in the 37 projects that were no longer operating at full capacity (or had ceased operating entirely) were asked to identify the factors responsible for the decrease in their projects' activities or scope. As shown in Figure 5-2, 19 projects cited a lack of funding for the ongoing maintenance of the project operations or systems, 15 projects cited personnel changes, and 13 projects cited technological obsolescence, i.e., the availability of faster or more accurate technology. Only 6 projects identified loss of partners as a contributing factor, while only 4 projects cited mechanical obsolescence or lack of community support.

Figure 5-2
Number of TIAP projects reporting impediments to full operation: 1994 and 1995 demonstration and access grants no longer operating at full capacity (n = 37)



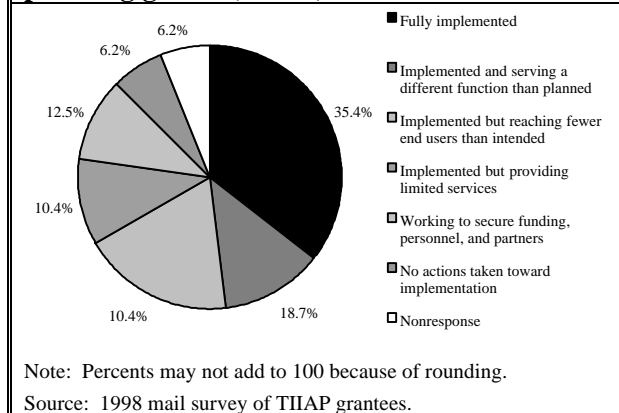
Planning Projects

As shown in Figure 5-3, almost four-fifths (77.0 percent) of 1994 and 1995 planning projects indicated that their telecommunications plan had been partially or fully implemented at time they completed the mail survey. The remaining planning grants indicated that they had not yet implemented their telecommunications plan. Specifically:

- Over one-third (35.4 percent) indicated that their telecommunications plan had been fully implemented;

- Almost one-fifth (18.7 percent) indicated that their plan had been partially implemented to provide the full range of services but was reaching fewer end users than intended;
- Over one-tenth (12.5 percent) indicated that a revised version of their plan had been implemented and was serving a function that was considerably different from what had originally been envisioned;
- One-tenth (10.4 percent) indicated that their plan had been partially implemented to provide the full scope of end users with a limited range of services;
- One-tenth (10.4 percent) indicated that they were still working to secure the necessary funding, personnel, or partners needed to implement the plan; and
- Another 6.2 percent indicated that the plan had not been implemented, and that no steps were being taken to initiate implementation.

Figure 5-3
Current status of telecommunications plans developed by TIAP projects: 1994 and 1995 planning grants (n = 48)



Respondents in the 25 planning projects that had not fully implemented their telecommunications plans were asked to identify the factors responsible for the decrease in their projects'

activities or scope. As shown in Table 5-1, 16 projects (64.0 percent) cited a lack of funding, 12 projects (48.0 percent) indicated that the required personnel had not been secured, 11 projects (44.0 percent) cited time constraints, and 8 projects (32.0 percent) indicated that the required partners had not been secured.

Securing Ongoing Funding

As shown in Table 5-2, the 1994 and 1995 demonstration and access projects were able to secure funding for a broad array of operating expenses. The three most frequently cited ongoing operating expenses for which funding was secured were access lines (75.6 percent), maintenance and upgrades (65.2 percent), and personnel and

contractual salaries (61.5 percent). In addition, just over half (51.9 percent) reported ongoing training costs, suggesting that projects have been able to maintain mechanisms for continuing to expand the number of end users (or to continue to increase the knowledge of existing end users). For example, two of the case study sites have maintained their efforts to use training to expand the number of end users who benefit from project-related activities. Charlotte's Web trains 25 new volunteers each month to create Web pages. In Grace Hill, neighborhood residents continue to receive training in how to use computers to access the MORE Time Dollar Exchange.

Exhibit 5-1 Example of a project that is serving an expanded role

SAFETYNET—NEW HAMPSHIRE 1995 Access Project in Public Services

While no longer located within the original grant recipient organization, the SafetyNet-NH project has continued through the Technology Partnership, a coalition of networks that provided part of the initial match for the grant. The Technology Partnership also became a long-term mechanism to support SafetyNet-NH beyond the demonstration project. Throughout New Hampshire, service providers and the New Hampshire Department of Health and Human Services (NHDHHS) are committed to building on the accomplishments made during the demonstration project. The project director, now at the Community Health Institute, will continue to work on the electronic benefits system as project director to the Technology Partnership to ensure that an information infrastructure is created that will link the community-based organizations to the data warehouse operated by NHDHHS. The Technology Partnership is also providing funding to the regional networks to develop intranets that will support regional data sharing and coordination of efforts. When this linkage is realized, it will mark the beginning of statewide electronic data transfer and an end to the centralized system of applying for state-sponsored financial assistance.

Source: 1998 case study.

**Table 5-1
Number of TIAP projects reporting
impediments to full implementation: 1994 and
1995 planning grants that have not been fully
implemented**

| Obstacle | Total |
|--|-------|
| Lack of available funding | 16 |
| The required personnel have not been secured | 12 |
| Time constraints | 11 |
| The required partners have not been secured | 8 |
| The technology specified in the plan has become obsolete.... | 5 |
| Lack of community support..... | 4 |
| Lack of interest on the part of the grantee organization | 2 |
| Other | 5 |

Note: Respondents could select more than one item.

Source: 1998 mail survey of TIAP grantees.

Evidence from the case studies suggests that projects' corporate partners are also being used as a source of ongoing funding. For example, maintenance and expenses for upgrading facilities was provided to the NETmobile in Edinburg, Texas, by its partner, Hughes Electronics Corporation. Hughes donated the satellite dish, personal earth station, maintenance support, and satellite transmission time for the duration of the project. They have continued their support as NETmobile goes into its fourth year of operation and have also provided numerous resources that enabled the NETmobile to remain operable beyond the grant period. Hughes is currently

Table 5-2

Percentage of TIAP projects that secured ongoing funding for operating expenses: 1994 and 1995 demonstration and access grants (n = 135)

| Operating expense | Yes | No | Not applicable | Nonresponse |
|--|------|------|----------------|-------------|
| Access lines..... | 75.6 | 10.4 | 4.4 | 9.6 |
| Maintenance and upgrade or hardware, software, and other equipment items and facilities..... | 65.2 | 21.5 | 3.0 | 10.4 |
| Personnel and contractual salaries..... | 61.5 | 21.5 | 5.9 | 11.1 |
| Training costs..... | 51.9 | 23.7 | 12.6 | 11.9 |
| Travel expenses..... | 40.0 | 31.9 | 15.6 | 12.6 |
| Physical plant..... | 37.8 | 23.0 | 26.7 | 12.6 |
| Depreciation expenses..... | 29.6 | 34.1 | 25.2 | 11.1 |
| Data subscriptions..... | 25.9 | 31.1 | 28.9 | 14.1 |

Source: 1998 mail survey of TIAP grantees.

providing an average of \$60,000 to \$80,000 a year to support the project. The structure, frame, and power supply for the NETmobile trailer have

continually been improved to accommodate changing expectations of the NETmobile. They upgraded the computers from 486s to Pentiums, installed a new satellite feed horn, and continued to provide free satellite time. According to the project director, the university would not be able to continue to operate the NETmobile without the support from Hughes.

Exhibit 5-2
Example of project providing
a limited range of services

LEADERSHIP, EDUCATION, AND ATHLETICS IN
PARTNERSHIP
1994 Demonstration Project in ECLL

The Leadership, Education, and Athletics in Partnership (LEAP) project in New Haven, for example, was unable to maintain its National Youth Center Network (NYCN) due to a lack of funding. NYCN was a group of organizations that created an interactive database of over 200 youth organizations and resources with the purpose of exchanging best practices, successes, and other experiences in youth work. The national network required staff time and other resources in organizing and maintaining communication lines.

At the end of the grant period, staff limited the project to one of the two services of the original TIAP project. Without further funding for NYCN from the original grant partner, LEAP staff decided that continuing and expanding the LEAP program, a group of computer learning centers for low-income youth, was a better use of scarce funds. Thus, while NYCN was not sustainable, LEAP has opened new computer centers and begun partnerships with local schools that will expand access to more students and their parents.

Source: 1998 case study.

Approximately two-thirds of mail survey respondents indicated that they had secured ongoing funding for personnel and contractual salaries. Findings from the case studies suggest that, in some instances, local governments have been a source of this ongoing funding. For example, the director of Project InterLinc approached the city and county governments for continued project funding. The city allocated money to help pay for administrative costs, which included the project director and webmaster, and a full-time assistant. In addition to administrative costs, project funding continued to support Internet connection for the sites. Project staff hope this will be a long-term commitment by the government, but the possibility of funding continually changes as the political environment changes in Lincoln, Nebraska. An encouraging sign of the sustainability of the project is the new Government Access and Information Committee made up of elected officials and others who act as a steering committee for the project.

Several of the site visit projects indicated that they also secured funding by becoming revenue generators. Exhibit 5-4 provides an example of one project that collects a nominal users fee to remain viable. Other steps taken by project to ensure that they remain operational beyond the TIIAP grant period are described below.

- **Build and Strengthen Partnerships.** Charlotte's Web continues to work on a number of different projects with miscellaneous funders. Two current projects involve work with law enforcement. One, with the Council of Governments, enables police chiefs, particularly those in the rural counties outside of Charlotte, to use private e-mail communication. The other, funded by the U.S. Department of Justice, in partnership with the Charlotte-Mecklenburg Police

Exhibit 5-3
Example of a project that ceased operations
due to technological obsolescence

INFO/PENNSYLVANIA KIOSK PROJECT
1994 Demonstration Project in Public Services

The Info/Pennsylvania kiosk pilot project installed kiosks that employed simple-to-use, touch-screen interfaces that linked customers in a variety of communities with seven agencies and Penn State University. The kiosk project was officially discontinued in October 1997, a year after the grant period ended. A major factor that contributed to the end of Info/Pennsylvania was the emergence of Web technology during the grant period. The World Wide Web allowed state agencies to disseminate information to a much wider audience and at a much lower cost than the kiosk system. In addition, state agencies found it much easier to revise information in a Web environment to ensure that content was timely. As agency interest in participating in the kiosk system diminished, the project decided to disconnect the units. Project staff indicated that the advent of the Internet served to magnify the shortcomings of the kiosk approach. As a result, several respondents suggested that future projects research all available and emerging technologies before investing in a long-term approach.

Source: 1998 case study.

Department and the University of North Carolina at Charlotte, will establish a statewide community policing institute that will provide training with credit value.

- **Transfer Ownership to Communities, Access Sites, or Users.** Berkshire County's QUEST project's efforts to sustain the countywide education network have primarily involved shifting the project's management and strategic direction decisions away from QUEST and toward the schools. The main goal has been to maximize the use of the infrastructure that has been implemented to date. During the project, schools had to pay only their telecommunications costs for Internet connectivity and any costs incurred for internal infrastructure. With the grant's conclusion, QUEST started billing schools to cover the difference between any operating revenue generated by fundraising activities and current operating expenses. The schools agreed to assume this portion of the service.
- **Upgrade Hardware or Network Capabilities to Ensure Technological Viability.** Grace Hill undertook various hardware and system upgrades since the end of the grant period in order to sustain it. The project's plans for the future focused on increasing the number of residents who knew about and participate in the MORE Time Dollar Exchange. In an effort to further expand residents' access, Grace Hill is seeking to acquire three vans that would be equipped with personal computers. These vans would then be used to introduce computers, the MORE Time Dollar Exchange System, and all associated activities to residents who are unable or reluctant to visit the existing computer workstations. Project staff are also in the process of reprogramming the system so that Grace Hill's services can be made available on the Internet.

- **Conduct Ongoing Strategic Planning.** The NetWellness project continues to conduct strategic planning to generate specific sustainability strategies. To determine NetWellness future, a planning team organized a strategic planning session in 1997 involving members of the local business community, health care community, the Medical Center, and Bio/Start, a state agency

Exhibit 5-4

Example of a project collecting user fees to fund ongoing activities

LOS ANGELES FREE-NET 1994 Demonstration Project in Community Networking

The Los Angeles Free-Net charges users a small annual fee for accounts and therefore had a reliable source of income prior to receiving the TIIAP award. However, in keeping with the free-net philosophy, subscription fees are waived for anyone who cannot afford the annual fee, as well as for classroom accounts and library accounts. The annual fee is \$20 for the text-based service and \$40 for the graphics-based service. Current projections show that user fees will fully cover all operational expenses associated with maintaining the network and possibly expanding the user base and the range of services provided. Whereas LAFN used to have one paid staff member prior to the TIIAP-funded expansion, the network has added three part-time assistants to help with systems operations. These positions are funded entirely through user fees (not through the TIIAP grant). LAFN management plans to continue expanding the service area receiving local call access. A geographical analysis has identified a node location that would complete the network's local service area coverage of Los Angeles County and also include a large portion of Orange County. It is expected that LAFN will be able to fund the \$7,000-\$10,000 expansion project entirely with income generated through user fees. Because the income generated by the user fees has allowed the project to sustain itself beyond the grant period and, in all likelihood, will enable the network to continue to expand its user base and range of services, this novel (at least among free-nets) funding strategy represents an important practice that other projects may consider emulating.

Source: 1998 case study.

whose purpose is to assist in developing commercial applications of biotechnical research. Many of the ideas that were generated at that meeting were being prioritized by the NetWellness team at the time of the site visit in January 1998. Among the ideas being discussed were the following: (1) conducting formal outreach activities to encourage doctors to promote NetWellness during their consultations with patients; (2) making NetWellness more interactive by developing a point/counterpoint feature in which different perspectives on a current medical controversy or development will be presented and allowing users to react to the information via a formal survey; (3) restructuring the Ask an Expert feature to incorporate more multi-disciplinary, multi-institution teams to work together in responding to health inquiries from the public; (4) expanding into areas in which the public has expressed a great deal of interest such as alternative medicine and medical insurance; and (5) involving medical and pharmacy students in answering public questions as part of their curriculum under the oversight of instructors and physicians.

PROJECT EXPANSIONS AND SPIN-OFFS

Respondents were also asked to provide information on the extent to which their projects had expanded to serve additional end users or generated spin-off activities that provide additional services not included in their TIIAP proposal. This section addresses these two issues.

Projects Expansions that Serve Additional End Users

Nearly two-thirds (65.4 percent) of respondents reported that their projects had expanded to serve additional end users in locations or organizations beyond those targeted in the proposal. In addition to increasing the number of end users and access

sites, many of these projects had taken advantage of the Internet's capabilities to dramatically broaden the service area covered by their projects (see Exhibit 5-5). One respondent, for example, reported that after the project team developed a core training capacity, they "launched a virtual training initiative, which offers hands-on training at major conferences and events nationwide."

The total dollar amount of additional equipment or resources that were leveraged in connection with these expansions was over \$93 million. The amounts leveraged for individual projects ranged from \$4,500 to \$20 million, although the majority of projects leveraged funds in the range of \$100,000 to \$1 million. The funding for these expansions came from a wide range of sources, including local, state, and federal agencies, private industry, nonprofit foundations and organizations, and community organizations in varying combinations. Exhibit 5-6 provides an example of a project that leveraged \$3 million.

EXHIBIT 5-5
Example of a project that used its TIIAP
grant to serve additional end users

LOS ANGELES FREE-NET
1994 Demonstration Project in Community
Networking

Some case study sites indicated that they may have been able to implement parts, but not all, of their projects and therefore would not have been able to serve as many end users. For example, the Los Angeles Free-Net management doubt that they would have been able to expand local call access throughout Los Angeles County without the TIIAP grant. They speculate that perhaps one of the four expansion nodes may have been able to be funded with user fees; however, there were no alternative funding sources that would have supported the implementation of all four expansion nodes. TIIAP funding not only was critical for implementing the network, but it validated the network in the eyes of the community. Universities and community organizations were found to be more willing to work with a network that has received a seal of approval from the Department of Commerce.

Source: 1998 case study.

There were no notable differences in the extent to which expansions had taken place across projects of differing application areas or funding levels. Nor were there any differences between projects funded in 1994 and 1995. However, projects funded for 21 months or longer were more likely to have expanded to serve additional end users (79.6 percent) than were projects funded for a shorter duration (57.1 percent).²⁹ And demonstration projects were more likely to have expanded to serve additional end users (71.9 percent) than were access projects (52.3).³⁰

Spin-Off Activities that Provide Additional Services

Almost two-thirds (62.1 percent) of projects indicated that they had generated spin-off activities that were providing additional services not included in the TIIAP proposal. The types of spin-off activities that were reported included the establishment of (1) training laboratories, institutes, workshops, and programs; (2) technical services to individuals and organizations; (3) information databases and directories; (4) software and website development; (5) research collaboration; and (6) Internet-based public services.

The dollar amounts for additional equipment or resources that were leveraged in connection with these spin-off activities tended to be smaller than the amounts leveraged for project expansions. The total dollar amount of additional equipment or resources that were leveraged in connection with these spinoffs was over \$41 million. The amounts leveraged for individual projects ranged from \$1,600 to \$10 million, although the majority of projects leveraged spin-off funds in the range of \$300,000 to \$700,000. The funding for these spin-off activities came from a similarly diverse combination of public and private sector organizations. There were no notable differences

²⁹ $\chi^2_{(2)}=6.96, p<.05$

³⁰ $(\chi^2_{(1)})=5.02, p<.05$

in the extent to which spin-offs had taken place across projects of differing types, application areas, grant period, or funding levels.

Exhibit 5-6
Example of a project that leveraged
funding after the grant period

**MOBILE COMMUNITY HEALTH INFORMATION
NETWORK**

1995 Access Project in Health

Other sites used the prestige of a TIIAP grant to leverage funding after the grant period. Since the Mobile Community Health Information Network (MCHIN) grant ended, the hospital system has secured \$3 million to continue networking health care providers and to improve the ability to transfer medical information, including patient records, electronically. The \$3 million direct appropriation from the U.S. Department of Health and Human Services, Health Resources and Services Administration, will continue and expand the work initiated through the TIIAP grant to establish MCHIN. Without the TIIAP grant, the project director said, the additional funding from DHHS and the project expansion are not likely to have occurred. Now the participants are asking for faster access and more types of information.

Source: 1998 case study.

